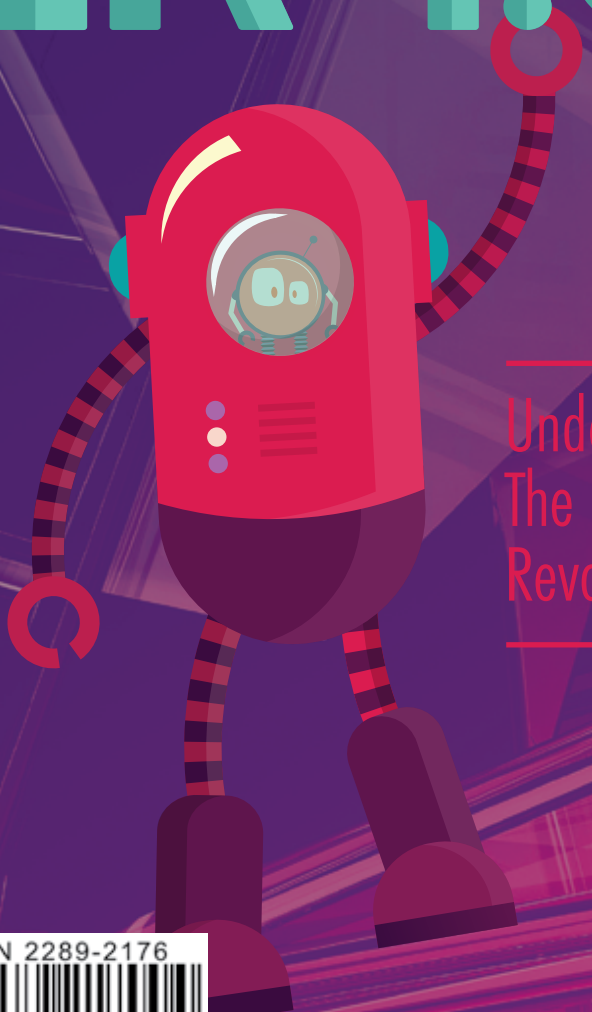
UNIMAS
UNIVERSITI MALAYSIA SARAWAK

Tag it

ISSUE 10 | 2018
UNIMAS IT MAGAZINE

IR4.0



Understanding The New Revolution

Industrial Revolution 4.0

Our place in the equation

Holistic Assessment through Outcome Based Education Approach

Improving the way we evaluate undergraduate students in the university

Infrastruktur *Visualization* dan *Hyper-Converged*

Penjimatan kos pengurusan pelayan

ISSN 2289-2176
9 772289 217004

FROM THE EDITOR

Industrial Revolution 4.0 is sweeping the world causing disruption and up-ending norms which have long been established in the world.

Industrial Revolution 4.0 heralds the convergence of the physical, digital and biological world, where technology enables greater interactions between citizens of the world, greater interactions between people and the technology at hand and greatly complements the best parts of our creativity as human beings. Industrial Revolution 4.0 would push us towards a more "robotic" world, where the boundaries between what makes us human and mechanical is blurred.

In this issue of Tag-it, we strive to explain and introduce some of the core elements of Industrial Revolution 4.0 and the approaches that Universiti Malaysia Sarawak (UNIMAS) will take. We also take a glimpse into how UNIMAS has shaped, customized and integrated iCGPA with its own student evaluation system.

There is much to explore about Industrial Revolution 4.0 and we are sure that new topics will present themselves as time goes on. And one would be faulted if one does not take part in the revolution that is the Industrial Revolution 4.0.

Cheers!

- Maclean Patrick -

Centre for IT Development & Services
Universiti Malaysia Sarawak
94300 Kota Samarahan
Sarawak, Malaysia
Tel +60 (82) 581000
Fax +60 (82) 665147
Web http://www.citds.unimas.my
FB https://www.facebook.com/citdsunimas

Patron: YBhg Professor Datuk Dr Mohamad Kadim Bin Suaidi
Advisor: Harun Maksom
Chief Editor: Maclean Patrick Sibat
Editor: Laila Bte Abang Ahmad, Latifah Loh Bte Abdullah, Nur Sherina James Abdullah, Majina Binti Sulaiman, Khairilzamrie Bin Rosle
Proofreaders: Laila Bte Abang Ahmad, Chuah Kee Man
Marketing & Advertising: Flora Intai
Designer: Ling Sze Ting, Pauline Beremas Anak George Gerrie, Amanda Anak Hendrick, Ahmad Zikrilah Bin Abdullah, Asha Khairullah Bin Abdollah

DARI MEJA PENGARAH

Assalamualaikum ...Salam Hormat dan Salam UNIMASku Sayang.

Alhamdulillah masih diberi kesempatan bertemu lagi dalam Tag-it edisi 10.

Semua Universiti Awam di Malaysia mengimpikan sebuah Kampus Pintar. Bagi merealisasikan impian ini universiti termasuk warganya harus melalui satu transformasi seiring dengan perkembangan Revolusi Industri 4.0 (IR4.0) yang banyak menekankan penggunaan internet dalam setiap urusan kehidupan (internet of things).

Antara cabaran ke arah impian ini:

1. Transformasi minda untuk menerima dan menerap teknologi digital - semua perlu berubah dan bersedia mendepani gangguan digital.
2. Pembangunan persekitaran Kampus Pintar - saling terhubung tanpa wayar, tanpa kertas dan tanpa tunai.
3. Penyediaan persekitaran dan ruang pendidikan pintar - Bilik Kuliah Pintar, Penggunaan teknologi Realiti Maya (VR) dan Realiti Tambahan (AR).
4. Pembangunan Modal Insan - membina pengetahuan dan kepakaran baharu yang bersesuaian dan menepati keperluan era Revolusi Industri Keempat.

Realitinya organisasi perlu merancang secara strategik dan membuat pelaburan peningkatan infrastruktur dan keselamatan ICT sediada bagi menjayakan hasrat ini. Infrastruktur ICT berteknologi tinggi menjadi keperluan paling asas bagi menyokong persekitaran pintar dan menjadikan suasana dan pengalaman pembelajaran-pengajaran yang lebih menarik.

Semoga usaha ke arah mencapai impian ini dipermudahkan.

Selamat membaca dan diharap Tag-it kali ini dapat memberi manfaat.

Salam

- Harun Maksom -

CONTENTS

On The MOVE

eCuti

eCuti is an inhouse development system and combining 3 modules for staff – permanent, contract and shift into a single system. The system went live on 5th February 2018.

eAttendance

eAttendance was developed in-house and uses Dynamic QR Code to replace smart card scanning. The system comes with additional features such as Internal Movement, External Movement, Out of Office for Official Purpose and integration with eCuti. It was successfully launched on the 1st January 2018.

MediPlus Launching

The UNIMAS Mediplus system which was developed in-house in order to cater for the needs of the UNIMAS Clinic was officially launched during MAGU 2018, 10th April 2018.

GOE Application Migration

In order to speed up the migration process for the GOE application, the followings have been included into the UNIMAS Support services:

- ***Bursary*** – *Permohonan Akaun Amanah*
- ***Bahagian Keselamatan*** – *Tadbir Urus Kunci, Smartcard & Access Door, Aduan & Laporan, Iring Kawal dan Papan Tanda*
- ***CGS*** – *Postgraduate Matters*

Existing services are:

- ***ICT*** – *Network, hardware, Software & Application*
- ***General*** – *Am*
- ***Academic*** – *Prasiswazah*
- ***Pejabat Pembangunan*** – *Asset, Transportation, Utility, Electrical & Aircond*
- ***Unit Penginapan Pelajar*** – *Kolej*

Industrial Revolution 4.0

Our Place in the Equation

a
revolution
has
arrived
and
it will
impact
everyone.

The first industrial revolution was the advent of the use of water and steam to power and mechanize industry. The second industrial revolution involved the use of electricity to further explode the capabilities of industry to mass produce. The third industrial followed the use of computer and information technology to automate and control industry. The fourth industrial revolution is a natural progression from the third where the lines between technology and the biological world is blurred.

This is a revolution where the Internet of Things is prominent and the wave of big data drives decision making on every level of society. It must be noted that Industrial Revolution 4.0 is not limited, in its affect, to just industry or production-based systems but it spans to encompass every aspect of everyday living for humans in the coming years.

It is merely the enhancement of what is currently prevalent.

Billions of people are already connected in one way or another to each other mostly through social media or just through the humble phone number. According to the Global Digital Report 2018, the number of internet users worldwide is 4.021 billion, the number of social media users worldwide is 3.196 billion and the number of mobile phone users is 5.135 billion.

Facebook alone has 2.167 billion active users followed by Google's YouTube at 1.5 billion active users. WhatsApp (Facebook-owned) and Facebook Messenger comes in third with 1.3 billion active users each.

Industrial Revolution 3.0 introduced the use of computers and automation to industry. But said industries remained closed and confined to their localities. The internet introduced the capability for industries, which were once in solitude to connect and share information with one another. Big production factories now practice 'just in time' supply chains, where their suppliers send the components needed when and where it is needed, eliminating the need for inventory of parts. This is only possible with accurate and in-time information that is shared between all parties involved.

We now live in a connected world which is borderless and populated with data as a commodity that fuels and drives economy. And the marriage of data to automation forms the foundation for Industrial Revolution 4.0.

UNIMAS has moved quickly by creating the Pusat Analitik Data Raya dan Visualisasi at Faculty of Computer Science and IT. We asked for comment from the Dean, Associate Professor Dr Johari Abdullah on his thoughts concerning this new centre.

What was your initial reaction upon hearing the announcements by Datuk Vice Chancellor concerning Industrial Revolution 4.0?

AP Dr Johari: Extremely excited since I feel that UNIMAS is taking the right decision in jumping into the bandwagon of Industry Revolution 4.0 which is something that is happening in all aspect of our society whether work, entertainment, education and so on. We are in a good position in term of expertise and resources to be involved in Teaching/Learning, research and innovation in the areas within Industry Revolution 4.0. Our main goal is to prepare the workforce of the future whom are equipped with the skills and knowledge in the technology areas within Industry Revolution 4.0.

What are the immediate plans for the new Big Data centre?

AP Dr Johari: The immediate plan is to compile all information about the expertise and resources within UNIMAS and with external stakeholders (other Institutes of Higher Learning, industries, government sectors, etc) related to big data research and education, and to come up with a strategic plan for the centre to deliver the objectives of the centre of which to conduct research related to Big Data to support the economic sectors within the state of Sarawak. As a start, there has been a series of talks and training on various aspects of Big Data Analytic ranging from basic introduction to the concept of Big Data and several technical courses aim at professionals in this area.

Who will staff the centre? What will their backgrounds be like?

AP Dr Johari: At the moment, the centre is parked under the Faculty of Computer Science and IT, UNIMAS, therefore the operational aspect of the centre is using the existing resources. The centre is planning to appoint research fellows from different faculties whom are involved in this area, and fellows or researchers from other partner institutions such as Swinburne, Curtin, UiTM, UCTS and so on. We will also involve industry partners in term of collaborating on the know-how and the tools and software related to this area. As for the resources, we are in the process of establishing a Big Data Analytic platform to provide the researchers with access to the tools that are require. Another aspect of Big Data Analytic is of course the data itself. We hope to be able to work with various stakeholders such as the state government to have access to the data corpus in relevant areas.

What do you hope to produce in the immediate future from this centre?

AP Dr Johari: The immediate needs are to consolidate the information of various experts in this area within UNIMAS, and with external partners. We have started with several activities over the past few months involving talks and workshops to provide awareness and technical skills in the field of Big Data Analytics. This year will be about establishing the infrastructure and the human capital required together with activities involving training and research.

The impact of Industrial Revolution 4.0 cannot be understated. It is a revolution that would affect everyday activities and on how the world around us interacts with each other and ultimately how it interacts with us.

Holistic Assessment through Outcome Based Education Approach

Improving the way we evaluate undergraduate students in the university.

By Dr Azzahrah binti Anuar (CAAD), Dr Hamimah binti Ujir (CAAD), Prof Madya Dr Shanti Faridah binti Salleh (CAAD), Dr Rohana binti Sapawi (CAAD), Noraziah binti Abdul Wahab (FE), Dr Raudhah binti Ahmad (FE), Majina binti Sulaiman (CITDS), Nur Azzryn Farahayn binti Zainurin (CAAD)

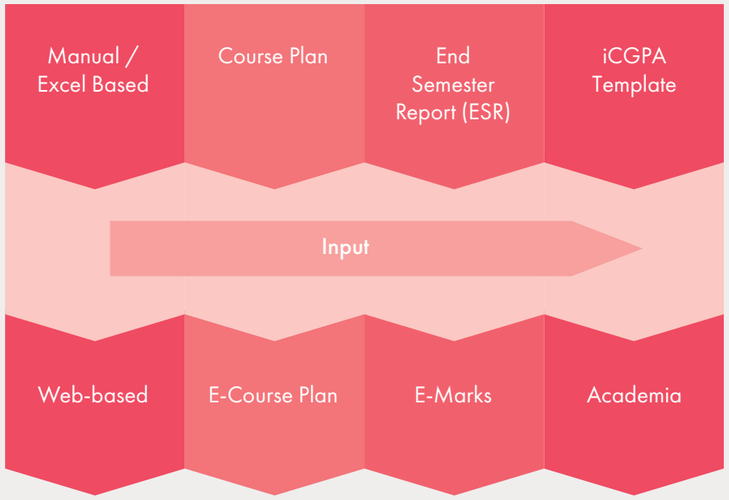
It begins with the designing of the program using the ***Outcome Based Education (OBE)*** *approach.*

All of the program information and mapping will be documented in **iCLASS** (***Integrated Curriculum, Learning and Assessment Support System***) by the Deputy Dean (Undergraduate) and Program Coordinators. The updating of the course plan must be done by all course coordinators every Semester in iCLASS. The final step is for the lecturers to map the assessment components to course learning outcome (CLO) and input their assessment marks into **iMark** (***Integrated Marks System***) which was previously known as eMarkah. The iCGPA analysis and the iCGPA Spiderweb will be generated upon completing all the steps.

Implementation Efforts

The first phase of the system development for iCGPA was initiated in June 2016 until January 2017 in collaboration with the Faculty of Engineering and Centre of Quality Assurance and Academic Development (CAAD). The Bachelor of Chemical Engineering program was selected as a pilot program involving 44 students from the 2016 / 2017 cohort. Several iCGPA workshops were conducted with the Engineering Faculty members to discuss the requirements and functionality of the system.

Parallel Support System



** Recommended by trainer during iCGPA talk on 28/06/2016 @ Rumah Universiti, UNIMAS.*

More Info!

iCGPA Template

- The Excel-Based system completed
- The mark are keyed in and iCGPA for every student are generated.

Academia

- PEO < > MQF LODs = Done
- PEO < > PO = Done
- PO < > CO = Done

Some additional functions were included such as the *Program Educational Objectives* (PEO) - *Program Learning Outcome* (PLO), *PLO-Malaysian Qualifications Framework* (MQF) and PLO-CLO mapping information as illustrated in the Curriculum Matrix diagram below. eCLASS was rebranded to iCLASS after taking into account the new functions of iCGPA.

The iCGPA analysis was generated manually using MS Excel (End of Semester Report) for the 2016/2017 academic session. The iCGPA analysis report was verified at the Faculty level and presented to the Ministry of Education (formerly known as Ministry of Higher Education) in February 2017. The iMark system was developed as a revamp to eMarkah, in line with the new requirements in iCGPA. The iMark development has been initiated in March 2017 and completed in May 2017. The system testing then has been conducted in June 2017 and validated by the Engineering Faculty lecturers as well as Elective and Generic courses lecturers.

The Phase II of the iCGPA development continued from April 2017 through August 2017. Several new functions have been developed to analyze the MQF-PLO-CLO scoring and mapping of data into iCGPA reporting in the form of spider webs and pre-transcripts for students. Upon validation of the iCGPA data and results using the MS Excel manual method, as well as completing the iCLASS-iCGPA web application, all programs in the Engineering Faculty were required to use the iCLASS-iCGPA system during 2016/2017 academic session.

Curriculum Matrix: Course <> PO <> MQF LOD

MQF PLO	PROGRAMME OUTCOMES	KNC1013	KNC1023	KNC1052
1	1	3	3	2
	2	3	3	2
2	5			3
3	6			
4	7			
	8			
5	9	1		
	10		1	
6	3			
	4			
7	11			
8	12			

3 - Strong Emphasis (>= 30%)
2 - Moderate Emphasis (10 - 30%)
1 - Little Emphasis (< 10%)

iCLASS and other support systems

A lot of rigorous efforts have been taken by the ***Center of Quality Assurance and Academic Development*** (CAAD) with the assistance of the ***Centre for Information Technology Development and Services*** (CITDS) to create awareness among students and lecturers to ensure the smooth running of iCGPA in UNIMAS which include the following:

The iCGPA system implementation stages

Phase 1

Participation from the Chemical Engineering Program in Semester 1 of 2016-2017 session

Phase 2

Participation from all Programs in the Engineering in Semester 1 of 2016-2017 session

Phase 3

Participation from all University programs in Semester 1 of 2017-2018

** The birth of the iCGPA system is the hallmark of the OBE implementation in all undergraduate programs in UNIMAS.*

10 Skills you'll need to thrive in IR4.0

1 Creativity

The quality of randomness and the ability to build something out of ideas is a skill that will pay off now and in the future

2 Negotiation

The ability to negotiate to businesses and individuals to come up with a win-win situation is a skill that will be needed to survive in affected industries.

3 Communication with others

Effective communication and team collaboration skills will be a top demand among job candidates in any industry

4 Judgement and decision-making

The ability to condense vast amounts of data, with the help of data analytics, into insightful interpretations and measures decisions is a skill that will be useful in the information age

5 Complex problem solving

The skill to see relationships between industries and craft creative solutions to problems that are yet to appear is a must to keep up with AI machines

6 Cognitive flexibility

The ability to switch between different person as to accommodate the challenge at hand will be important to be successful in combined industries

7 Critical Thinking

People who can turn data into insightful interpretations will be sought after due to the complexity and interconnectedness of various fields like computer science, engineering, and biology

8 People Management

Robots may acquire analytical and mathematical skills, but they can't replace humans in leadership and managerial roles that require people skills

9 Service Orientation

People who know the importance of offering value to clients in the form of services and assistance will be in demand as businesses would want to provide solutions to the problems of society

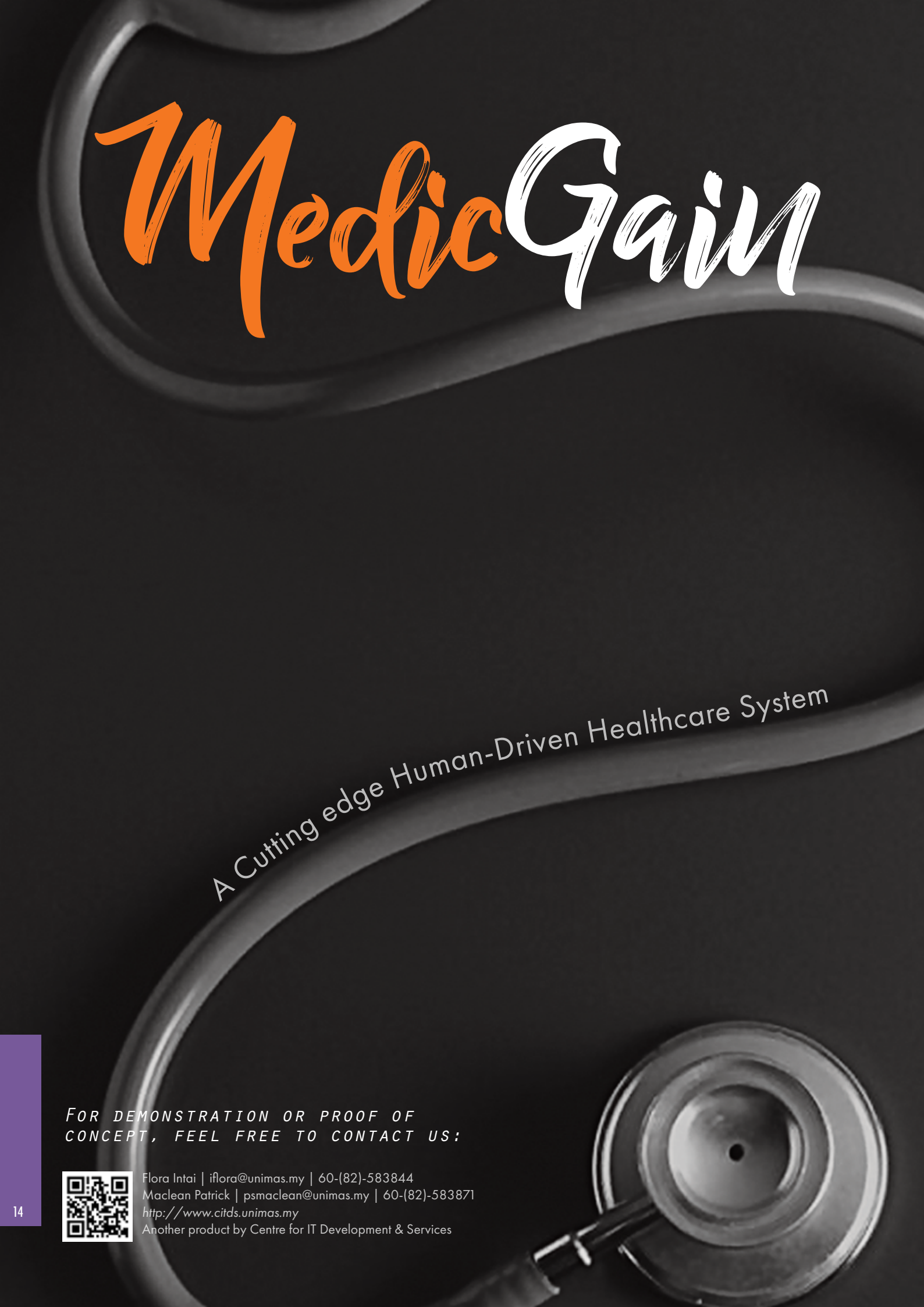
10 Emotional Intelligence

Qualities that relate to emotional intelligence such as empathy and curiosity will be a big consideration factor for hiring managers of the future

Information Adapted from **Guthrie Jensen**

MedicGain

A Cutting edge Human-Driven Healthcare System



For demonstration or proof of concept, feel free to contact us:

Flora Intai | iflora@unimas.my | 60-(82)-583844
Maclean Patrick | psmaclean@unimas.my | 60-(82)-583871
http://www.citds.unimas.my
Another product by Centre for IT Development & Services

Cloud Services

Wonder how to cut down on the cost for purchasing and maintaining a physical server infrastructure?

Friendly

Cloud computing - a more environmentally friendly choice beside reducing carbon emissions and electricity consumption; resource utilisation rates are also much higher.

Cost

Build the right cost-effective cloud server for your exact needs.

Access

When the teams can access and work from anywhere, anytime, it will surely increase your company's productivity and competency.

Basic Setup

4 vcpu

8 GB Ram

100 GB

Linux OS

FOR DEMONSTRATION OR PROOF OF CONCEPT, FEEL FREE TO CONTACT US:

Flora Intai | iflora@unimas.my | 60-(82)-583844
Maclean Patrick | psmaclean@unimas.my | 60-(82)-583871
http://www.citds.unimas.my
Another product by Centre for IT Development & Services

INFRASTRUKTUR VIRTUALIZATION DAN HYPER-CONVERGED

Penjimatan kos pengurusan pelayan

Oleh Awang Aizzuddin Sulong b Awg Sabli

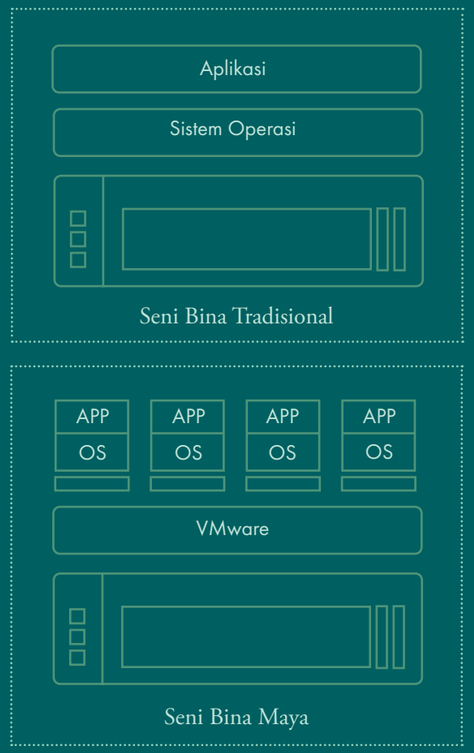
Salah satu tanggungjawab Unit Pengurusan Pusat Data (UPPD) adalah untuk memperuntukkan server aplikasi kepada PTj-PTj agar dapat menyampaikan perkhidmatan mereka dengan berkesan. Keupayaan UPPD untuk memenuhi keperluan pengguna terpaksa dirumitkan dengan kekangan sumber sediaada.

Penyelesaian yang digunakan oleh UPPD untuk menghadapi situasi ini adalah dengan teknologi virtualization.

Virtualization adalah teknologi terkini untuk menjana Server Maya (Virtual Machine atau VM). Ini boleh dilaksanakan melalui perisian hypervisor yang bertanggungjawab melakukan abstraksi komponen server, juga dinamakan dalam konteks sebagai sumber pengkomputeran. Dengan ini sumber pengkomputeran dalam satu-satu server fizikal (dinamakan induk atau hosts, parent) boleh dikongsi bersama oleh beberapa Server Maya (dinamakan anak atau guest, child).

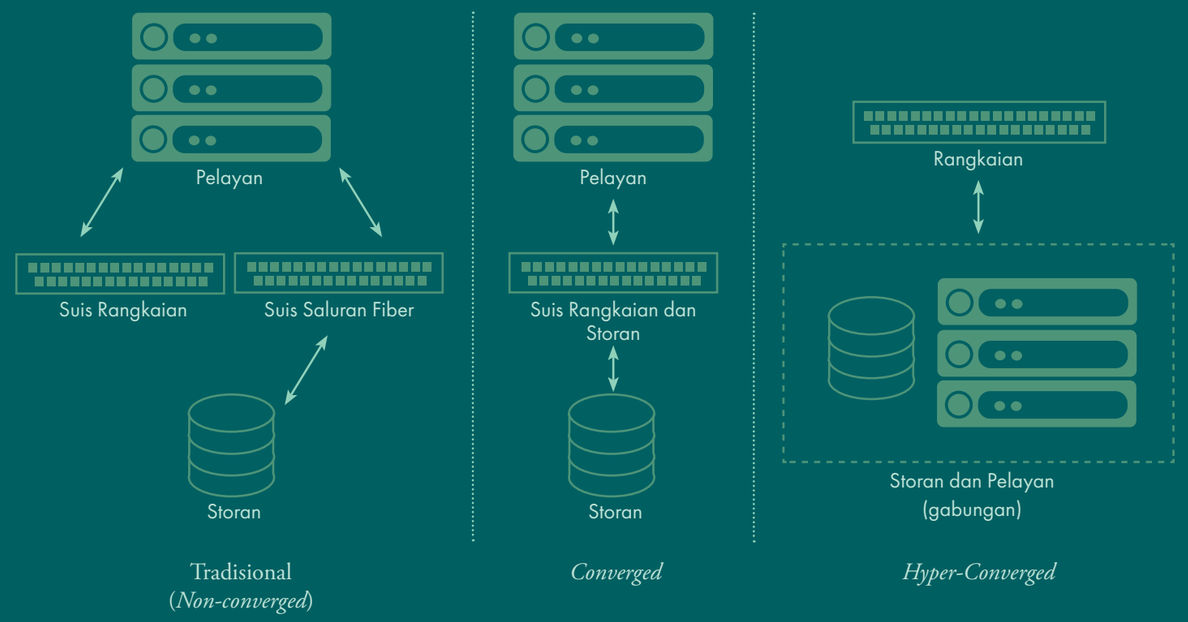
Selagi mana sumber pengkomputeran mencukupi, selagi itulah Server Maya boleh dijana. Salah satu kelebihan Server Maya adalah berkebolehan untuk migrasi antara satu server induk kepada server induk lain tanpa perlu mengganggu ketersediaan Server Maya tersebut dan aplikasi di dalamnya. Satu lagi kelebihan Server Maya adalah berkebolehan untuk diklon. Server Maya yang telah diklon adalah sama seperti Server Maya yang asal. Kelebihan klon ini digunakan untuk tujuan penyalinan atau untuk memendekkan tempoh peruntukkan penyediaan server.

Rajah 1: Fizikal vs Virtualization

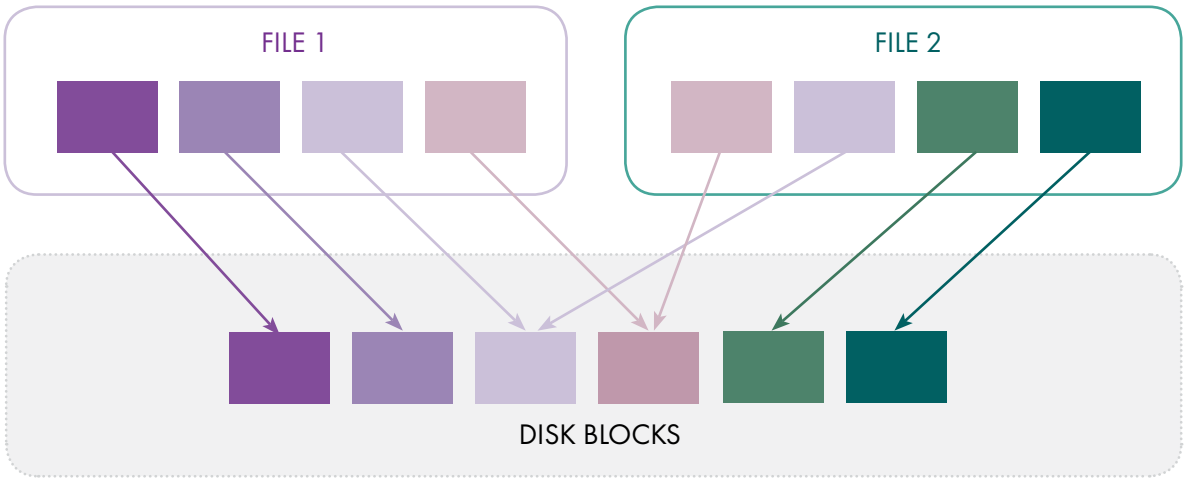


Hyper-Converged Infrastructure (HCI) adalah salah satu subset teknologi Virtualization yang bertumpu ke arah storan dan rangkaian. Perkembangan pesat teknologi Virtualization telah memangkinkan perkembangan bidang teknologi storan yang menitikberatkan kepantasan akses, kapasiti simpanan, fungsi compression dan fungsi deduplication.

Rajah 2: Konsep HCI



Rajah 3: Konsep Deduplication



UPPD kini telah melaksanakan penggunaan HCI untuk aplikasi E-LEAP (*E-Learning Enrichment and Advancement Platform*). Secara keseluruhan 7 unit Server Maya diperuntukkan untuk aplikasi E-LEAP. 3 unit daripada Server Maya tersebut disediakan untuk simpanan data bersama-sama dengan webserver.

Sebab utama HCI dipilih adalah kerana keperluan storan data dan storan penyalinan yang besar.

Berikut adalah hasil perbandingan HCI dan SAN:

SAN	HCI
3TB storan data untuk 1 server	7TB keseluruhan
9TB storan data keseluruhan	
42TB storan penyalinan harian	
24TB storan penyalinan mingguan	
36TB storan penyalinan bulanan	
102TB storan penyalinan keseluruhan	
111TB storan keseluruhan	

Pelaksanaan Virtualization dan HCI telah mengubah cara memperuntukkan server berbanding dengan cara peruntukkan fizikal. Penjimatan dan kemudahan yang didapati daripada pelaksanaannya telah menyelesaikan banyak masalah yang akan dihadapi apabila jumlah server bertambah. Pelaksanaan ini akan ditambahbaik pada masa hadapan dari aspek pemulihan bencana dan kesinambungan perkhidmatan. Dengan perubahan ini dilihat dapat membantu CITDS dalam menggalas cabaran untuk memberikan perkhidmatan yang terbaik kepada UNIMAS.

GreAT TranSit

Green Application for Transportation in Smart City

A team from the Centre for IT Development and Services – Khairilzamrie Rosle and Mohd Roffizal Romali, are working in collaboration with researchers Dr. Mohamad Nazim Jambli from the Faculty of Computer Science and IT and Cik Sinarwati Mohamad Suhaili from the Centre of Pre-university Study in developing a real-time scheduling system for public transport.

The system uses ICT solutions to integrate different technologies such as Internet of Things (IoTs) and Cloud Computing to help schedule vehicles and also to update users about these schedules via a mobile application.

The system can be used by transportation companies to schedule their assets - whose movements are tracked in real-time, allowing for great cost saving and efficiency. All these information are transmitted via cloud computing to servers that do big data analysis for the real-time scheduling and also to the mobile app that shows the latest information to the user.

The form of public transport system can cater for taxi schedules, rail transit schedules, public buses schedules and train schedules.

The systems can help reduced the waiting time for users of public transportation by providing up-to-date information on the vehicles currently traversing their routes. The system could also help reduce gas emissions, by making sure only the right number of taxis or buses are on the road to cater for the number of people using public transport at any one time.

iRIS v7

Pengurusan Penyelidikan terus dimantapkan

Oleh Mohd Razif Bin Baital @ Latif

Intergrated Research Information System atau iRIS terus melangkah kehadapan dengan proses naik taraf iRIS kepada versi iRIS7

Pembaharuan dan penambahbaikan pada iRIS7 diadaptasikan dari contoh amalan terbaik MyGrant KPT dengan penambahbaikan khusus untuk proses permohonan geran, pemantauan dan pelaporan kemajuan projek. Proses permohonan geran penyelidikan, permantauan dan pelaporan merupakan fasa-fasa penting yang dititik beratkan oleh universiti-universiti awam lain.

iRIS7 mewujudkan kawalan proses dan pemantauan, serta berperanan sebagai rujukan utama data-data penyelidikan, laporan dan statistik menerusi antaramuka yang mesra pengguna. Diperlengkapkan dengan ciri pemantauan yang jelas beserta aspek kawalan akses yang kemas, iRIS7 dilihat mampu berperanan sebagai alat kawalan proses atas talian yang lebih cekap, menjimatkan kos serta menyingkatkan masa.

Pengguna akan sentiasa mendapat akses kepada maklumat statistik semasa yang terkini secara pantas melalui fungsi-fungsi yang terbina dalam iRIS7 seperti dashboard dan instant report.

iRIS7 turut memudahkan dan menggalakkan interaksi antara penyelidik, pengurusan fakulti, pentadbir data dan jawatankuasa berkaitan penyelidikan di mana setiap pihak terlibat boleh berhubung terus sesama sendiri dan iRIS7 bertindak selaku perantara.

Integrasi pintar dengan pangkalan data luar berkaitan penyelidikan seperti repositori institusi (UNIMAS IR - eprints) dan SCOPUS membolehkan data penerbitan di muat turun terus dari SCOPUS dan UNIMAS IR. Fungsi ini juga bertindak sebagai alat pemeriksa pengarang bagi penyelia daripada *Centre For Academic Information Services* (CAIS) di mana pengesahan maklumat pengarang secara khusus, iaitu pengarang utama, penulis bersama, dan lain-lain dapat dilaksanakan. Di samping itu juga, iRIS membolehkan pengguna memautkan akaun iRIS7 mereka kepada ID SCOPUS yang berkaitan.

iRIS7 turut berupaya untuk mengurus dan menjejak data pengkomersilan projek seperti harta intelek, perlesenan dan perpindahan teknologi oleh para penyelidik UNIMAS. Ini membolehkan penyelidik memantau secara rapi segala urusan pengkomersilan produk yang terbit daripada hasil penyelidikan mereka dan secara amnya membolehkan universiti mendapat maklumat penting berkenaan usaha yang diadakan untuk pengkomersilan dan dana yang dijana daripada usaha-usaha tersebut.

iRIS7 turut diperlengkapkan dengan fungsi pengesahan akaun pengguna menggunakan Google email account bagi pengguna-pengguna daripada luar UNIMAS. Fungsi ini memudahkan perkongsian maklumat dan sumber diantara penyelidik-penyelidik UNIMAS dan penyelidik luar dengan memberi penyelidik luar akses kepada iRIS7.

Usaha iRIS7 untuk terus maju kehadapan dengan pembaharuan-pembaharuan yang inovatif dan relevan telah mendapat pengiktirafan besar setelah berjaya mendapat Anugerah Inovasi ICT Pengurusan 2017 UNIMAS.

BRIDGING PROGRAM

Infrastructure, Application Systems dan Development Tools memperkayakan skop tugas golongan FA29 tukar lantik.

Pusat Pembangunan Khidmat Teknologi Maklumat (PPKTM) UNIMAS telah berjaya mengadakan bengkel latihan untuk meningkatkan tahap kompetensi golongan FA29 Tukar Lantik. Tujuan utama bengkel-bengkel ini diadakan adalah untuk memperkayakan para staf FA29 Tukar Lantik tanpa meninggalkan tugas hakiki mereka.

Seramai 22 staf FA29 Tukar Lantik telah menyertai bengkel latihan yang dijalankan oleh penceramah daripada kalangan staf PPKTM yang berpengalaman. Antara topik-topik yang diajar adalah Introduction to Network Infrastructure and Security, Introduction to Data Centre Facilities, Campus Wireless Technology, Ethernet Technology, Application System Architecture dan Introduction to Programming Tools.

Topik-topik pengisian bengkel Bridging Program:

Infrastructure

Introduction to Server, Database & Data Centre

- *Data Centre facility & Monitoring on Data Centre*
- *Linux OS Installation*
- *Basic Linux Commands*

Introduction Network Fundamentals, Campus Wireless Technology & Ethernet Switching

- *Introduction Network Monitoring*
- *Case Study*
- *AP configuration*
- *Introduction to the UNIMAS Security (Logical Perimeter)*
- *LAN security*

Application System Architecture & Introduction to Programming Tools

- *Basic HTML, CSS and Bootstrap*
- *Basic SQL and Reporting tool : i-net*
- *Basic System Support*
- *System Architecture and PHP Basic Programming*

COMING SOON

2020